

## **Peculiarities of Alteration of the Cenozoic Formations in the Golygin Basin, Kamchatka Peninsula**

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The on-land part of the Golygin Basin is situated on the southwestern Kamchatka Peninsula and is the northern end of the through system along the Kuril Islands in the Okhotsk Sea. The deposits of this basin were investigated by core samples taken from several boreholes. The Oligocene basaltic-andesite and cherty-tuffite-terrigenous formations overlie the Upper Cretaceous basement and laterally interchange. The studied cherty-tuffite-terrigenous formation was subjected to chlorite-lomontite hydrothermal propylitization (the interval of 3550-2500 m). Vitrinite reflectance ( $R_o$ ) reaches 0.90 % at a depth of 3550 m. According to these data the paleotemperature was about 200 °C at this depth (the recent temperature here is 150 °C). The Lower-Middle Miocene tuffite-cherty formation was propylitized at 135-90 °C (carbonate-corrensite-mordenite mineral assemblage) in the interval of 2500-1860 m. Above there is the Middle Miocene-Pliocene tuffite-coal molassa. The lower layers of the molassa were argillized. The upper part of the molassa was formed on completion of the hydrothermal activity and is characterized by early catagenetic changes (smectite-clinoptilolite mineral assemblage).

The non-steady temperature and fluid regimes caused irregular alteration and compaction of the Cenozoic volcanogenic-sedimentary formations in the Golygin Basin. Gradually compacted deposits of the catagenetic-altered molassa from the top down gave way to overcompacted hydrothermal argillized and carbonatized rocks. The lomontite metasomatites are decompacted and form secondary oil-gas reservoirs in the lower zone of propylitization.